

**FACULTY OF SCIENCE****DEPARTMENT OF ZOOLOGY****MODULE          HPH2B10****CAMPUS          APK****EXAM            NOVEMBER 2014****DATE: 19 November 2014****SESSION 1 8:30-11:30****ASSESSOR(S)****MRS J. DAS NEVES****INTERNAL MODERATOR****PROF GM WAGENAAR  
DR JC VAN DYK****EXTERNAL MODERATOR****DURATION      1 HOUR****MARKS    50**

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**NUMBER OF PAGES: 2 PAGES****INSTRUCTIONS:      Answer all the questions.**

### **QUESTION 1**

- 1.1 Explain how blood plays a role in the restriction of fluid loss at injury sites. (3)
- 1.2 Mark is in an accident and needs a blood transfusion. The doctors know that Mark's blood type is A<sup>+</sup>, which blood types would he be able to receive? (2)
- 1.3 How would the hematocrit change after an individual suffered a significant blood loss? (2)
- 1.4 Which type of white blood cell would increase in an infected cut? Explain your answer by referring to the function of the white blood cell. (5)

### **QUESTION 2**

- 2.1 With the aid of an annotated diagram, explain the pressure and volume relationship of the heart during a cardiac cycle. (10)
- 2.2 How does a drug that increases the length of time required for the repolarisation of pacemaker cells affect the heart rate? (2)

### **QUESTION 3**

- 3.1 List the seven major categories of the innate defenses and briefly explain the mechanism of each defense. (14)

### **QUESTION 4**

- 4.1 Name the factors that would affect compliance of the lungs. (3)
- 4.2 Define functional residual capacity (FRC). (2)
- 4.3 If Mark has an expiratory reserve volume of 1000 litres and a residual volume of 1200 litres, what is Mark's functional residual capacity? (2)
- 4.4 With the aid of a diagram explain the effects of a decrease in temperature on haemoglobin saturation. (5)